SOCIODEMOGRAPHIC TRENDS AFFECTING FORT LIGONIER

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Executive Summary

This report looks at the demographic and economic changes affecting the Fort Ligonier Historic Site in Westmoreland County, Pennsylvania. The University Center for Social and Urban Research was contracted by Dewey and Kaye, a non-profit consulting firm, to complete this research in support of a strategic planning process current underway.   This report focuses on a core market area of 11 counties in Southwestern Pennsylvania and Garrett County, Maryland. Major findings of this report include:

- Population in the 11 county focus declined by 401,165, or 13%, between 1970-2004. This decline resulted directly from the large scale economic restructuring of the mining and manufacturing industries that once were concentrated in the region. Economic diversification has replaced much of these core industries. As a result the region's economic decline has abated in recent years allowing for a convergence of local and national economic trends.

- Past economic decline resulted in age-selective migration of younger workers, leaving the Southwestern Pennsylvania with a disproportionately older population. Because of this older age demographic, the region currently exhibits natural population decline, resulting from deaths exceeding births.   Natural population decline will abate as local age demographics gradually converge with what is typical across the nation.

- Population decline for the focus area is projected to slow in coming years to be followed by modest population gains. Annual population growth is projected to increase by an annual average of 0.36% between 2008 and 2018. This compares to national population projections of annual population increases over 0.8% between 2010 and 2020.

- Employment trends have not mirrored population trends in the region.   Despite significant population decline, overall employment in the 11 county focus area has increased in recent decades. This has resulted primarily from increasing labor force participation of women in the regional labor market.

- Employment trends are projected to continue to exceed population gains. Average annual employment change in the 11 county focus area is projected to increase by 0.6% between 2008 and 2018. Employment patterns will reflect continuing diversification of the regional economy away from traditional heavy industries. By 2018, just under half of all regional jobs will be in service sector industries.

- Family structure and labor force trends have altered the composition of households in the region.   Pittsburgh and Southwestern Pennsylvania once had female labor force participation rates well below national averages. Recent data show that local female labor force participation rates have caught up with national patterns. As is typical across the country, the majority of working age women are employed full time.

- Over the long run, Fort Ligonier will be impacted by continued population and employment growth in the Washington-Baltimore, DC metropolitan area. Growth in the greater Washington area has far surpassed growth in Southwestern Pennsylvania for decades. This trend is expected to continue, resulting in the continuing expansion of the Greater Washington DC Metropolitan area.

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Introduction

This report summarizes demographic and economic trends in Southwestern Pennsylvania and adjacent areas will affect the Fort Ligonier Historical Site. Fort Ligonier is located on U.S. Route 30 and Pa. Route 711, in Ligonier, Westmoreland County Pennsylvania. Fort Ligonier was one of 11 important frontier forts built in Western Pennsylvania in the mid 18th century. Maintained and operated by the not-for-profit Fort Ligonier Association the site serves as a regional cultural and tourist attraction with regular visiting hours and an adjacent museum.   The site is fifty miles east of Pittsburgh and twelve miles north of the Pennsylvania Turnpike.

The University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh was contracted by Dewey & Kaye, LLC to compile this report in support of their efforts to complete a strategic plan for the Fort Ligonier site for the period 2008-2018. Where appropriate, projections and other analysis will concentrate on changes expected over this particular decade.

This report will focus on an eleven county area in Southwestern Pennsylvania and the Maryland Panhandle. These eleven counties include 7 counties in the Pittsburgh Metropolitan Statistical Area (MSA): Allegheny, Armstrong, Beaver, Butler, Fayette, Washington and Westmoreland. Focus counties outside of the Pittsburgh MSA include Cambria, Indiana, Greene, and Garrett County, Maryland. This focus area is depicted in figure 1. Dewey and Kaye have identified these 11 counties as the historical core market area for the Fort Ligonier Historic site. This report will cover the major demographic and economic trends that have been shaping the population in this focus area in recent decades.

Projections of the regional population and economic trends will also be presented, again with a focus on the major trends that are likely to affect strategic planning for the Fort Ligonier historic site.   Most projected data comes from the Pittsburgh REMI model, an econometric forecasting tool developed by Regional Economic Models Inc. of Amherst, MA and maintained by UCSUR. Details on the REMI model and other data sources used in this report are included in an appendix to this report.   Where available, data on the aggregate 11 county focus area is presented. In some cases data on a nine county area of Southwestern Pennsylvania is presented. Because the Pittsburgh REMI model covers 9 of 11 counties in the focus area, where supplemental data is not available, data for a 9 county area of Southwestern Pennsylvania is presented. In those cases, the nine county area excludes Cambria County, PA and Garrett County, PA.

Figure 1. Focus Counties
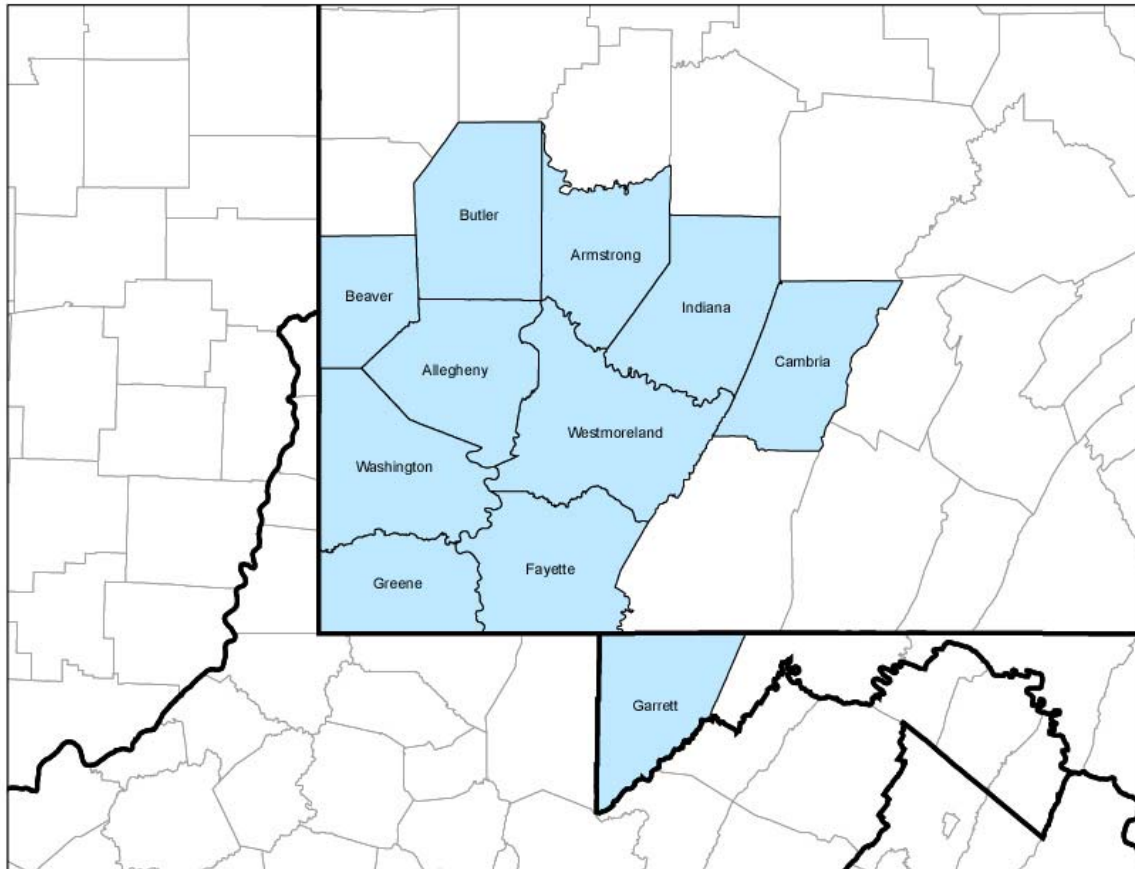
Southwestern Pennsylvania Today

Southwestern Pennsylvania has its largest population concentration in Allegheny County which forms the core of the Pittsburgh metropolitan region. Figure 2 depicts the population density across Southwestern Pennsylvania. The 11 county focus area encompasses both the Pittsburgh and Johnston Metropolitan Statistical Areas. Other nearby metropolitan regions include State College, Harrisburg, Altoona and Morgantown, WV. These are not the only concentrations of population in the region. Also nearby are adjoining *Micropolitan* Statistical Areas of New Castle, Indiana, Dubois, Somerset, and Cumberland, MD. The concept of Micropolitan Statistical Areas may not be familiar to many readers and is a new term defined by the Office of Management and Budget in 2003. Micropolitan areas are smaller concentrations of population that do not rise to the level of being considered metropolitan areas. Figure 3 is a map showing both the local metropolitan and micropolitan statistical areas. In 2003 OMB also introduced the concept of a *combined statistical area (CSA).* CSAs represent multiple metropolitan or micropolitan areas that have a high degree of employment interchange. CSAs often represent regions with common labor and media markets. The Pittsburgh MSA along with the New Castle, PA Micropolitan Statistical Area are together considered the Pittsburgh-New Castle Combined Statistical Area.

Figure 2. Population Density 2000
Southwestern Pennsylvania and Environs
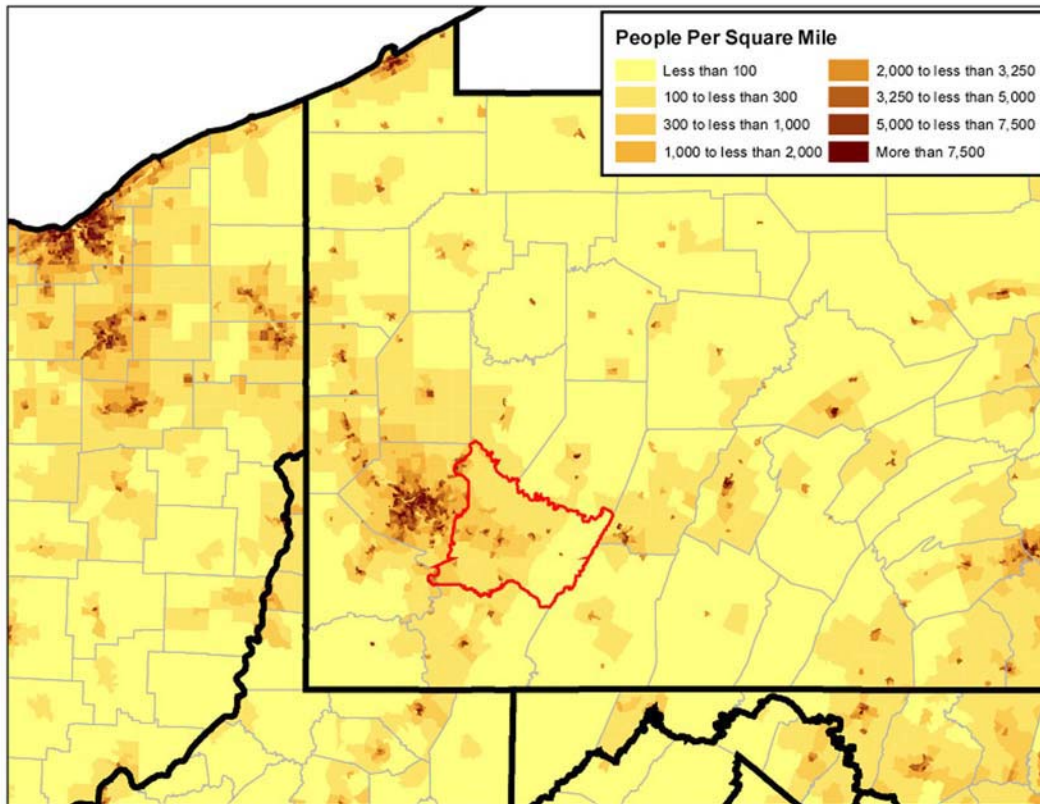
Westmoreland County is part of the seven county Pittsburgh Metropolitan Statistical Area, the largest population concentration in Western Pennsylvania. In 2005 the population of the Pittsburgh MSA exceeded 2.3 million. In 2000 the population of the 11 county focus area exceeded 2.7 million people. Table 1 is a summary of Census 2000 demographics in the 11 county focus area compared to the United States. Table 2 summarizes the 2005 demographics for the metropolitan statistical areas closest to Fort Ligonier. Table 3 summarizes the demographics of some of the larger micropolitan statistical areas in close proximity to Ligonier.

These tables provide an overview of the differences between the southwestern Pennsylvania region and the United States. The differences are almost entirely the result of low migration rates of population into Southwestern Pennsylvania over recent decades. Past migration was defined by significant out-migration of young workers. The Pittsburgh region has seen extremely low rates of international immigration in recent decades. One result of that trend has been a significantly lower diversity in the region compared to the nation.   In 2000, only 2.4% of the 11 county population was made up of foreign born residents who arrived in the country over the course of the 1990's, compared to over 11.4% of the national population. Over 90% of the regional population considers themselves white compared to 75% for the nation as a whole. To date, the flow of Hispanic immigrants, which make up the bulk of recent immigrants to the United States, have only had low migration rates into Southwestern Pennsylvania and environs.

Figure 3. Nearby Metropolitan and Micropolitan Statistical Areas
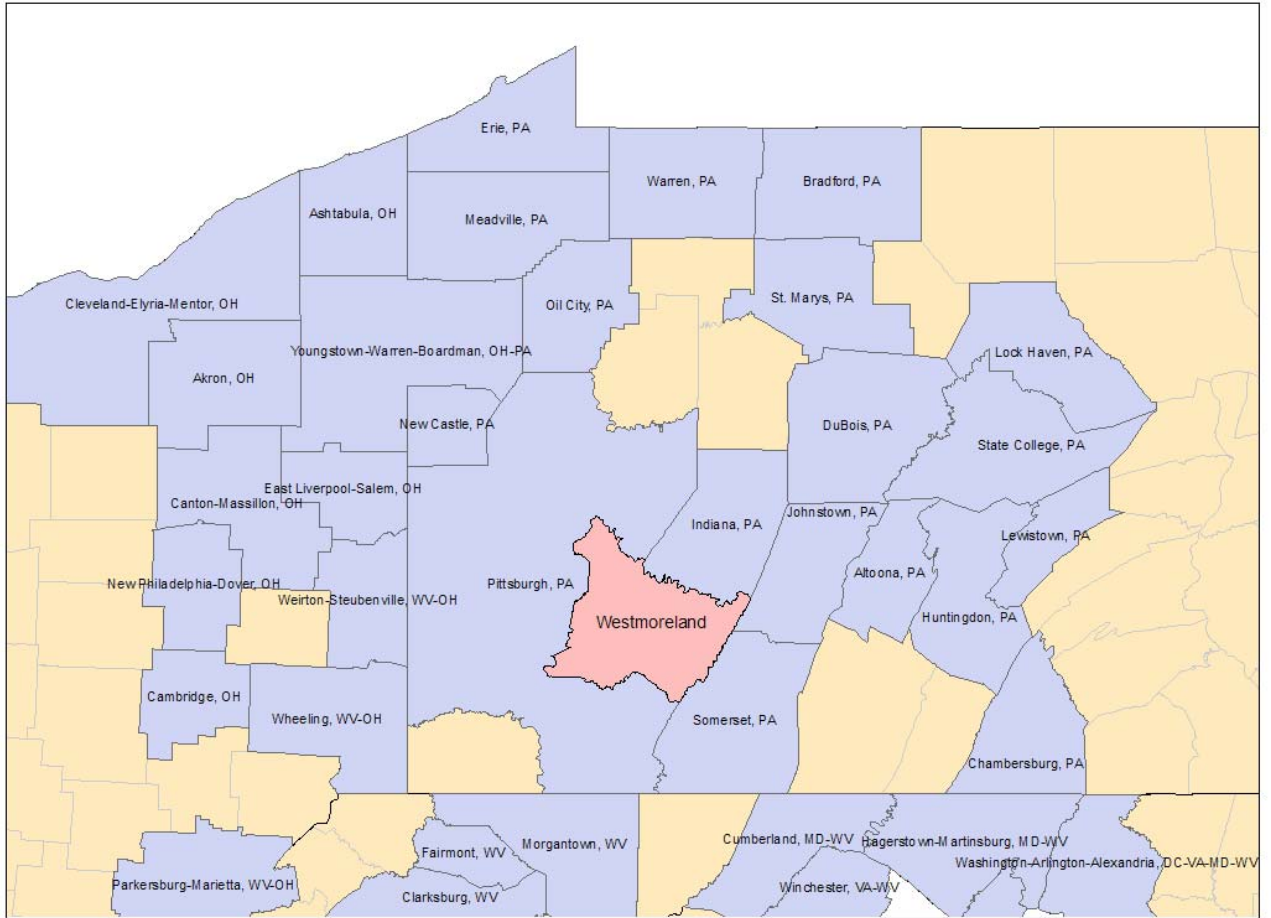
Table 1. Census 2000 Summary of 11 County Focus Area

	11 County Focus Area		United States	
Population by Race				
Total: population	2,743,808		281,421,906	
White alone	2,484,068	90.5%	211,353,725	75.1%
Black alone	196,717	7.2%	34,361,740	12.2%
Native American alone	3,168	0.1%	2,447,989	0.9%
Asian alone	26,429	1.0%	10,171,820	3.6%
Pacific alone	896	0.0%	378,782	0.1%
Other alone	6,468	0.2%	15,436,924	5.5%
2+ races	26,062	0.9%	7,270,926	2.6%
Sex and Age				
Total: population	2,743,808		281,421,906	
Male:	1,313,259	47.9%	137,916,186	49.0%
Female:	1,430,549	52.1%	143,505,720	51.0%
Under 18	608,615	22.2%	72,142,757	25.6%
Age 18-24	230,904	8.4%	27,067,510	9.6%
Age 25-34	329,312	12.0%	39,577,357	14.1%
Age 35-34	434,697	15.8%	45,905,471	16.3%
Age 45-54	394,384	14.4%	37,578,609	13.4%
Age 55-64	261,016	9.5%	24,171,230	8.6%
Ave 65 and Over	484,880	17.7%	34,978,972	12.4%
Nativity				
Total: population	2,743,808		281,421,906	
Native:	2,677,178	97.6%	250,314,017	88.9%
Born in state of residence	2,321,553	84.6%	168,729,388	60.0%
Foreign born:	66,630	2.4%	31,107,889	11.1%
Educational Attainment				
Total: Population 25+	1,904,289		182,211,639	
No hich school degree	298,433	15.7%	35,715,625	19.6%
High school grad (inc equivalency)	743,711	39.1%	52,168,981	28.6%
Some college, under 1 year	112,932	5.9%	12,884,843	7.1%
Some college, 1+ years, no degree	192,199	10.1%	25,466,752	14.0%
Associate degree	129,727	6.8%	11,512,833	6.3%
Bachelor's degree	270,778	14.2%	28,317,792	15.5%
Master's degree	102,552	5.4%	10,770,947	5.9%
Professional school degree	36,397	1.9%	3,619,535	2.0%
Doctorate degree	17,560	0.9%	1,754,331	1.0%
Household Income				
Total Households	1,117,193		105,539,122	
under $20,000	296,327	26.5%	23,325,275	22.1%
$20,000-$29,999	166,720	14.9%	13,736,955	13.0%
$30,000-$39,999	142,517	12.8%	12,954,424	12.3%
$40,000-$49,999	118,035	10.6%	11,210,080	10.6%
$50,000-$59,999	96,867	8.7%	9,537,175	9.0%
$60,000-$74,999	106,977	9.6%	11,003,429	10.4%
$75,000-$99,999	94,198	8.4%	10,799,245	10.2%
$100,000-$124,999	42,562	3.8%	5,491,526	5.2%
$125,000-$149,999	18,892	1.7%	2,656,300	2.5%
$150,000-$199,999	15,366	1.4%	2,322,038	2.2%
$200,000+	18,732	1.7%	2,502,675	2.4%

Table 2. Demographic Summary – Nearby Metropolitan Statistical Areas - 2005

	Pittsburgh		Johnstown		State College		Harrisburg		Altoona		Morgantown	
	#	%	#	%	#	%	#	%	#	%	#	%
Total population	2,314,937		138,963		124,263		500,356		122,717		106,899	
Population Under Age 18	503,123	21.7	28,894	20.8	21,552	17.3	115,926	23.2	27,169	22.1	20,078	18.8
Population Age 65 and Over	382,773	16.5	26,293	18.9	14,242	11.5	67,856	13.6	19,612	16.0	12,689	11.9
Median Age	41.7		43.9		29.8		39.8		40.7		36.3	
Total households	992,707		61,194		51,888		208,486		52,145		44,322	
Households with children under 18	263,741	26.6	16,790	27.4	12,154	23.4	61,819	29.7	14,037	26.9	11,533	26.0
Educational Attainment												
Population 25 years and over	1,629,318		99,653		74,156		344,276		85,603		70,881	
Less than 9th grade	45,839	2.8	4,467	4.5	2,049	2.8	10,722	3.1	2,311	2.7	3,027	4.3
9th to 12th grade no diploma	121,980	7.5	9,156	9.2	4,373	5.9	29,631	8.6	9,085	10.6	6,560	9.3
High school graduate (includes equivalency)	614,158	37.7	49,404	49.6	24,516	33.1	128,255	37.3	41,825	48.9	28,270	39.9
Some college no degree	264,211	16.2	12,239	12.3	9,503	12.8	52,042	15.1	11,933	13.9	10,195	14.4
Associate's degree	141,749	8.7	6,508	6.5	3,887	5.2	26,942	7.8	6,941	8.1	2,636	3.7
Bachelor's degree	277,857	17.1	11,023	11.1	15,662	21.1	61,742	17.9	9,532	11.1	9,095	12.8
Graduate or professional degree	163,524	10.0	6,856	6.9	14,166	19.1	34,942	10.1	3,976	4.6	11,098	15.7
School Enrollment K-12	374,241		21,153		15,208		86,181		20,252		14,689	
Percentage different county	3.2%		3.4%		10.5%		6.2%		2.6%		6.1%	
Median nonfamily income (dollars)	$22,351		$18,942		$20,164		$29,684		$19,988		$16,965	
Mean nonfamily income (dollars)	$32,469		$26,159		$29,050		$35,796		$23,321		$23,760	
Total households	992,707		61,194		51,888		208,486		52,145		44,322	
Less than $10000	92,172	9.3	6,119	10.0	5,994	11.6	13,644	6.5	5,925	11.4	9,020	20.4
$10000 to $14999	72,682	7.3	5,134	8.4	4,293	8.3	10,587	5.1	4,345	8.3	3,029	6.8
$15000 to $24999	137,287	13.8	9,394	15.4	7,380	14.2	21,903	10.5	8,697	16.7	6,489	14.6
$25000 to $34999	118,279	11.9	10,049	16.4	5,836	11.2	23,800	11.4	7,877	15.1	6,078	13.7
$35000 to $49999	153,334	15.4	9,760	15.9	8,259	15.9	31,590	15.2	8,257	15.8	5,298	12.0
$50000 to $74999	188,298	19.0	11,690	19.1	9,260	17.8	45,748	21.9	8,940	17.1	6,877	15.5
$75000 to $99999	104,645	10.5	4,504	7.4	5,050	9.7	29,257	14.0	4,906	9.4	3,253	7.3
$100000 to $149999	84,774	8.5	2,662	4.4	3,818	7.4	22,208	10.7	2,245	4.3	3,052	6.9
$150000 to $199999	21,404	2.2	638	1.0	945	1.8	5,287	2.5	473	0.9	535	1.2
$200000 or more	19,832	2.0	1,244	2.0	1,053	2.0	4,462	2.1	480	0.9	691	1.6

Source: American Community Survey. Data excludes group quarters population.

Table 3. Demographic Summary – Nearby Micropolitan Statistical Areas – 2005

	Indiana		Dubois		Somerset		New Castle		Cumberland	
	#	%	#	%	#	%	#	%	#	%
Total population	83,256		79,001		74,617		89,742		93,637	
Population Under Age 18	16,497	19.8	16,883	21.4	15,815	21.2	19,997	22.3	19,987	21.3
Population Age 65 and Over	12,406	14.9	13,232	16.7	13,322	17.9	15,947	17.8	16,378	17.5
Median Age	37.9		41.4		42.5		41.9		40.5	
Total households	34,449		33,129		31,758		36,623		40,488	
Households with children under 18	8238	23.9	8991	27.1	8721	27.5	9979	27.2	10642	26.3
Educational Attainment										
Population 25 years and over	54,824		55,955		53,113		62,839		64,660	
Less than 9th grade	2,656	4.8	2,877	5.1	3,194	6.0	1,996	3.2	2,209	3.4
9th to 12th grade no diploma	5,495	10.0	6,099	10.9	5,675	10.7	6,282	10.0	6,147	9.5
High school graduate (includes equivalency)	25,849	47.1	27,671	49.5	27,707	52.2	30,019	47.8	29,346	45.4
Some college no degree	6,384	11.6	7,258	13.0	6,149	11.6	8,449	13.4	11,439	17.7
Associate's degree	3,478	6.3	4,558	8.1	3,244	6.1	4,826	7.7	5,799	9.0
Bachelor's degree	6,424	11.7	5,241	9.4	4,961	9.3	7,583	12.1	5,744	8.9
Graduate or professional degree	4,538	8.3	2,251	4.0	2,183	4.1	3,684	5.9	3,976	6.1
School Enrollment K-12	12,097		12,567		12,124		15,509		14,647	
Percentage different county	5.1%		5.8%		3.0%		3.0%		6.4%	
Median nonfamily income (dollars)	$18,883		$17,998		$19,078		$17,231		$21,573	
Mean nonfamily income (dollars)	$24,010		$23,714		$23,730		$25,710		$26,307	
Total households	34,449		33,129		31,758		36,623		40,488	
Less than $10000	4,414	12.8	4,093	12.4	2,184	6.9	2,914	8.0	3,963	9.8
$10000 to $14999	2,498	7.3	3,121	9.4	3,251	10.2	3,119	8.5	3,404	8.4
$15000 to $24999	5,999	17.4	6,017	18.2	6,409	20.2	5,604	15.3	6,717	16.6
$25000 to $34999	5,321	15.4	4,584	13.8	4,525	14.2	4,294	11.7	7,228	17.9
$35000 to $49999	5,334	15.5	5,753	17.4	5,519	17.4	7,021	19.2	6,793	16.8
$50000 to $74999	6,523	18.9	5,291	16.0	5,468	17.2	6,945	19.0	6,317	15.6
$75000 to $99999	2,672	7.8	2,247	6.8	2,499	7.9	2,915	8.0	3,311	8.2
$100000 to $149999	978	2.8	1,520	4.6	1,386	4.4	3,160	8.6	2,094	5.2
$150000 to $199999	387	1.1	222	0.7	212	0.7	343	0.9	451	1.1
$200000 or more	323	0.9	281	0.8	305	1.0	308	0.8	210	0.5

Source: American Community Survey. Data excludes group quarters population.

Historic Trends

Population in the 11 county focus area declined by 401,465, or just under 13%, between 1970 and 2004. These population trends reflect what has been an ongoing and structural decline in the core industries that once dominated the region. Beginning in the 19th century and continuing through World War II, Southwestern Pennsylvania was dominated by mining and heavy manufacturing industries. In times of economic expansion the local need for workers drew immigrants into the region from around the country and the world. Recent population trends of the region mirror the economic decline of those core industries. As local industries experienced significant downsizing, labor demand slumped and reversed the migration flow that had once defined the region.

Manufacturing and mining industries defined not only the size and composition of the local population but also where that population settled within the region. Mining activity stretched out across a large portion of Southwestern Pennsylvania and West Virginia. Many individual mines and manufacturing plants formed the basis of townships and boroughs far from the region's core. Thus unlike many large cities of the early 20th century, the economic activity of Southwestern Pennsylvania was not concentrated in an urban core, but extended out from the city of Pittsburgh.

The primary challenge since World War II has been the continuing decline of manufacturing firms and jobs in the region. Periodic booms in the energy market have positively impacted local mining industries, but these impacts have often been temporary. Continuing improvements in mining productivity have continued to diminish the demand for labor in the mining industry. The relative competitiveness of local manufacturing industries had been weakening for decades prior to the 1980s. In the early 1980s however, the combination of a national recession and the rise in domestic and international competition accelerated the loss of jobs and created a crisis in absolute job loss. The region lost over 150,000 manufacturing jobs in just over a decade. Large-scale job loss translated to relatively large population declines as workers left the region. Though population loss had slowed dramatically by the end of the 1980s, the impact of this loss on the composition of the workforce and population would continue into the future.

The unique demographic structure of Southwestern Pennsylvania is one of the largest remaining legacies of past industrial restructuring. Economic transformation has already happened as the local economy has shifted away from reliance on the traditional heavy industries. Yet, even as the economic structure has diversified away from heavy industry, the population continues to have significantly different characteristics of the nation and other larger metropolitan regions. An older population, minimal in-migration and a comparative lack of diversity will affect population and economic trends going into the future. Over the long run, local population trends will also converge with national trends.

Historic Population Trends

Population decline has affected nearly all of Southwestern Pennsylvania. Figure 4 summarizes the population trends across the 11 county focus area since 1970. With the exception of a short period in the early 1990's population has been in a state of continuous decline. Table 4 summarizes the recent historical population trend in the focus area counties. Only 4 of the 11 counties in the focus area have increased in population between 1970 and 2004. Figure 5 is a map depicting same population trends across the broader region.

Until the mid-1990's population decline in the region was entirely the result of net migration out of the region. Those who left the region were much more likely to be young working age residents and their families. Thus, the Pittsburgh region quickly became one of the oldest regions in the country. Today, the Pittsburgh region has a disproportionate concentration of elderly residents. Because of the current age structure, the Pittsburgh region has now reached a period of natural decrease -- a rarity among U.S. regions -- where the number of deaths exceeds the number of births. When this is coupled with out migration, both components of the population change equation are now negative. While population decline has been fairly consistent in recent decades, it is important to note that the causes of population decline have differed across different time periods. In the early 1980's the population loss was almost entirely the result of young workers leaving the region. Natural population change at that time was positive. In the late 1990's natural population change was negative and out-migration made up a much smaller part of the overall population change.

Figure 4. Population Trends for the 11 County Focus Area: 1970-2004
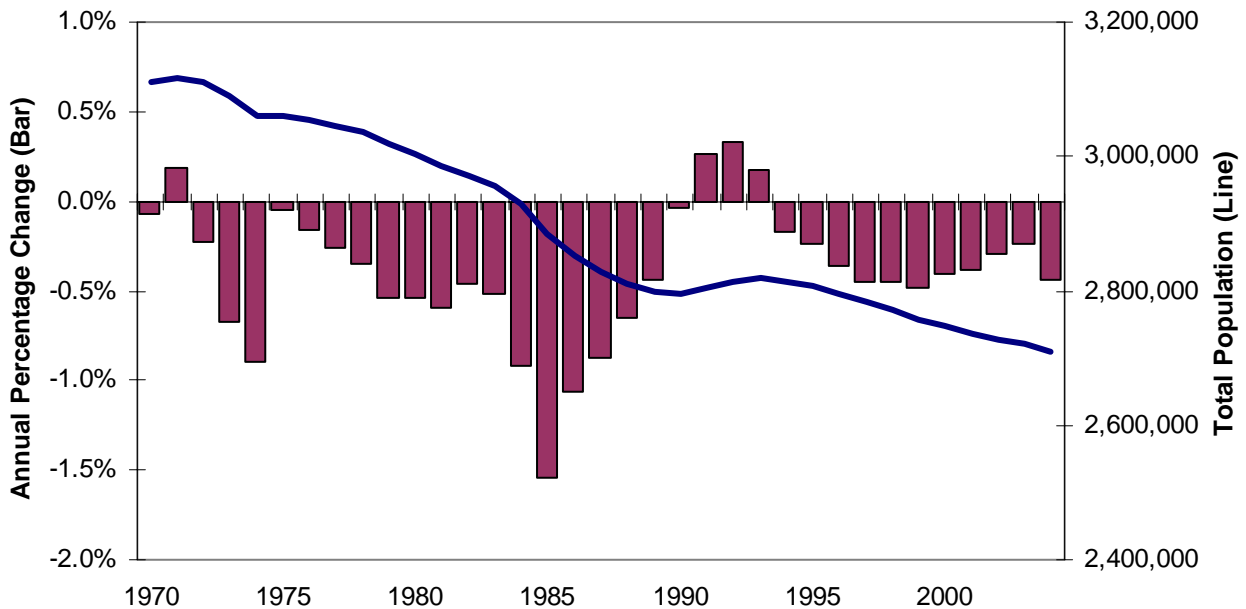
Source: Compiled from the Regional Economic Information System (REIS), Bureau of Economic Analysis.

Table 4. Population Trends by County 1970-2004

County	1970	1980	1990	2000	2004	Average Annual Change 1970-1990	1990-2004
Garrett, Maryland	21,607	26,555	28,236	29,832	30,043	1.5%	0.5%
Allegheny, Pennsylvania	1,602,690	1,448,253	1,336,740	1,279,817	1,247,512	-0.8%	-0.5%
Armstrong, Pennsylvania	75,732	77,716	73,516	72,318	71,373	-0.1%	-0.2%
Beaver, Pennsylvania	208,511	204,001	186,271	181,156	178,120	-0.5%	-0.3%
Butler, Pennsylvania	128,372	148,099	152,642	174,588	180,664	0.9%	1.3%
Cambria, Pennsylvania	187,061	182,986	162,938	152,245	148,646	-0.6%	-0.6%
Fayette, Pennsylvania	154,692	159,085	145,476	148,522	146,842	-0.3%	0.1%
Greene, Pennsylvania	36,264	40,508	39,539	40,684	40,001	0.5%	0.1%
Indiana, Pennsylvania	79,618	92,283	89,990	89,531	88,929	0.7%	-0.1%
Washington, Pennsylvania	211,534	216,958	204,569	203,040	205,319	-0.2%	0.0%
Westmoreland, Pennsylvania	377,212	392,294	370,467	369,820	367,937	-0.1%	0.0%

Source: Compiled from the Regional Economic Information System (REIS), Bureau of Economic Analysis.

Figure 5. Population Growth by County 1970-2004
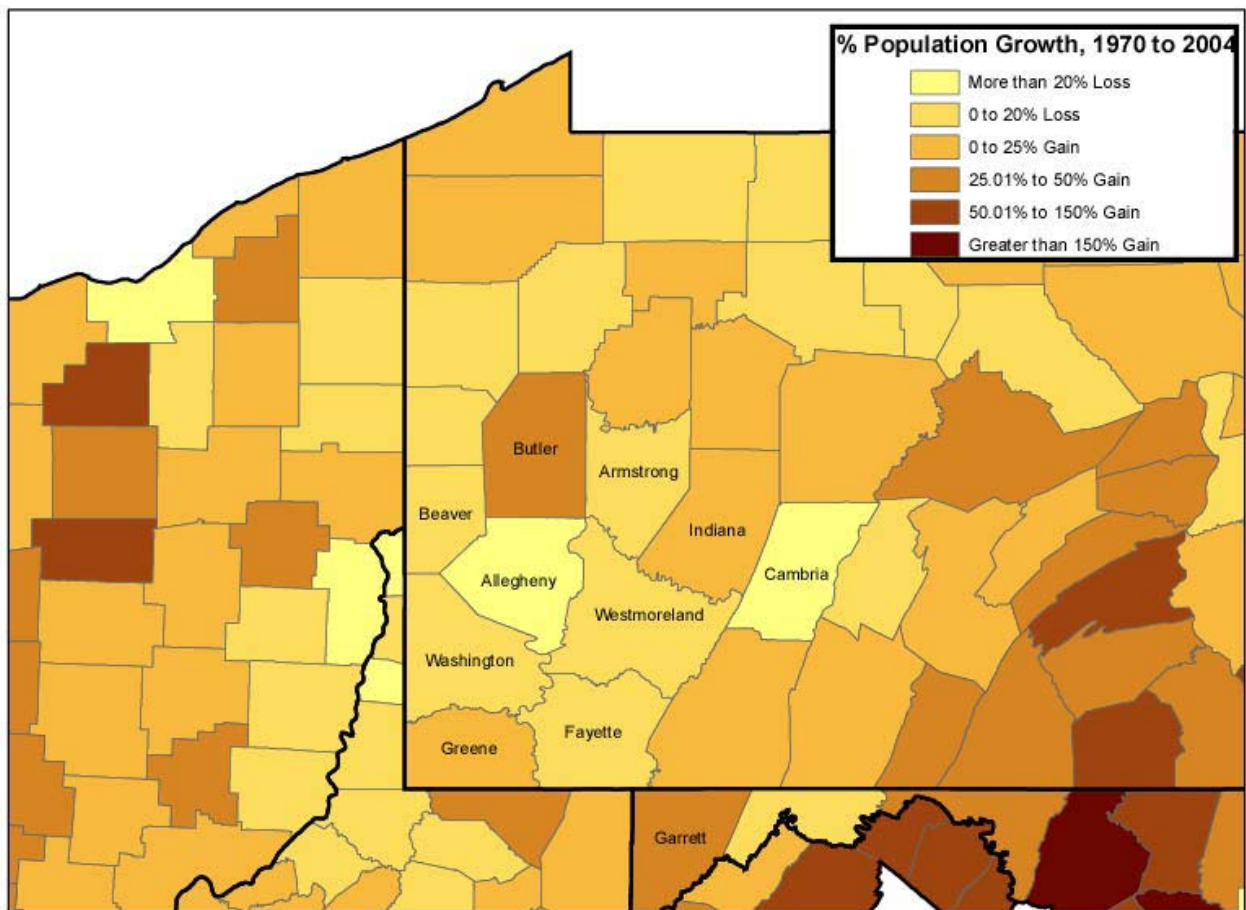
Source: Compiled from the Regional Economic Information System (REIS), Bureau of Economic Analysis.

Historic Employment Trends

Employment trends in the region do not mirror population trends. While population has been continuously decreasing in recent decades, regional employment has generally been increasing since the mid 1980's. Figure 6 depicts recent employment trends for the 11 county focus area.

Many suburban area counties have experienced higher employment growth rates than Allegheny County, the regions urban core. Much of this suburban job growth has been in retail and service sector jobs that closely track with population flows. A large part of the region's employment base has been retained in Allegheny County. Table 5 shows the county level employment changes in the focus area since 1970. In 2004, over 861 thousand jobs were located in Allegheny County, or 55 percent of all jobs in the 11 county focus area. The loss of residents and the retention of jobs in Allegheny County has been a factor contributing to larger commuting flows across the region. In 2000 an estimated 143 thousand workers commuted into Allegheny County daily from across Southwestern Pennsylvania and beyond.

While manufacturing employment has continued to decline, employment gains have extended across a range of service sector and related industries. Health and educational services, finance and other service industries have generated most of the employment growth across Southwestern Pennsylvania in recent decades.

Employment has been able to increase despite continued population loss because of trends in labor force participation. In particular the region has been impacted by steadily increasing trends in female labor force participation. Men in the regional labor force have actually declined in recent decades, but their loss has been more than made up for by greater number of women who have entered the labor force. More information on the changes in labor force participation and the implication for Fort Ligonier are in a later section of this report.

Figure 6. Employment Trends for the 11 County Focus Area: 1970-2004
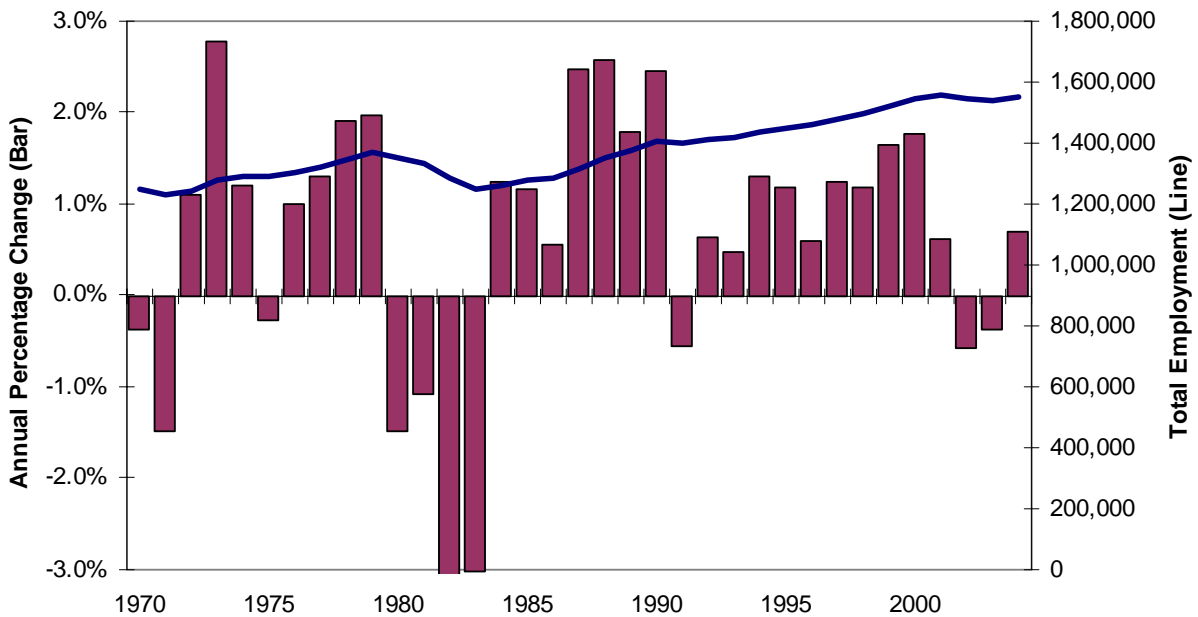
Table 5. Average Annual Employment Change by County 1970-2004

County	1970	1980	1990	2000	2004	Average Annual Change 1970-1990	1990-2004
Garrett, Maryland	6,723	10,214	14,328	17,619	19,427	5.7%	2.5%
Allegheny, Pennsylvania	740,788	773,155	819,868	875,284	861,868	0.5%	0.4%
Armstrong, Pennsylvania	22,517	25,017	26,031	31,174	31,143	0.8%	1.4%
Beaver, Pennsylvania	82,215	87,015	65,914	74,347	72,838	-1.0%	0.8%
Butler, Pennsylvania	47,223	57,065	69,934	89,232	95,966	2.4%	2.7%
Cambria, Pennsylvania	70,524	72,006	71,761	75,858	75,070	0.1%	0.3%
Fayette, Pennsylvania	41,910	44,542	46,726	55,593	59,284	0.6%	1.9%
Greene, Pennsylvania	11,601	14,614	14,110	16,465	16,496	1.1%	1.2%
Indiana, Pennsylvania	26,818	36,831	39,553	42,730	45,055	2.4%	1.0%
Washington, Pennsylvania	72,420	80,116	84,747	94,592	99,277	0.9%	1.2%
Westmoreland, Pennsylvania	125,286	149,649	155,270	174,257	176,007	1.2%	1.0%

Demographic Forecast

This section presents the baseline demographic forecast for the 11 county focus area in Southwestern Pennsylvania and Garrett County, MD. These forecasts are compiled from the Pittsburgh REMI model, a regional economic model produced by Regional Economic Models Inc. based in Amherst, MA and maintained by the University Center for Social and Urban Research at the University of Pittsburgh. Data for certain counties is supplemented by county profile forecasts acquired from Woods and Poole, a national consulting company. Further information on the REMI model, data, and forecasting methodologies are included as an appendix to this report.

Population decline in the 11 county focus area is projected to abate between 2000 and 2008. Slow population decline will be followed by flat and then modest population growth. Over the period 2008-2018 the 11 county focus area is projected to see a cumulative population increase 96,936 people or 3.6%. Though population increases would represent a significant change for a region that has experienced nearly continuous population decline over the last 40 years, this rate of population increase is considered minimal. At an average 0.36% per year, population increases in the 11 county area are projected to remain well below national growth trends over the period 2008-2018 and beyond. For comparison census projections estimate that the US population will increase annually by over 0.8% between 2010 and 2020.

Several factors are causing the regional population decline to abate in coming years. Population growth is comprised of two components: Natural increase: births minus deaths, and net migration: the difference between those moving into a place less those moving out of the place. Net migration losses for the region have historically been driven by low job creation rates and relatively poor economic performance compared to other large metropolitan regions. Not surprisingly, the Southwestern Pennsylvania suffered its severest outflows of migration during the 1980s, when multiple plant closings were causing permanent job losses throughout the region. The rate of this economic induced migration from the region has slowed markedly since the early 1980's.

In this one regard, the demographic trends of Southwestern Pennsylvania differ significantly from other regions of the county. Most regions of the U.S. experience a positive rate of natural population change caused by the excess of births each year to deaths. Southwestern Pennsylvania, with an age structure skewed to a relatively large elderly age cohort began to experience a correspondingly larger number of deaths than would be typical of a region its size. The high levels of out migration of workers in the 1980s meant the loss of not only baby boomers, but their children, the 'echo boom' population. That generation was not here to begin families in the region and was a factor in a lower number of births in the region than would be typical. Taken together, these factors resulted in the Pittsburgh region experiencing natural population decline beginning in the mid 1990s. The Pittsburgh region is the only large metropolitan region experiencing natural population decline at the beginning of the 21st century.

Currently, Southwestern Pennsylvania has reached a point where both components of population change are negative. Compounding the net migration from the region was natural population decline. For the first time in its measurable history, it is estimated that there were more deaths than births in Southwestern Pennsylvania beginning in 1996. Figure 8 shows the historical and projected trend for natural population change in the 11 county focus area. The rate of natural population decline is currently reaching its peak in 2006 with natural population decline moderating into the future. As natural population decline diminishes population trends will show some improvement. This trend will have secondary impacts because it can be expected to also slowing employment loss in the region. This is because the majority of local jobs in the regional economy exist to provide goods and services to the regional population. The elderly population in particular induces disproportionate employment in medical services and related industries.

Figure 9 shows the projected change in the regional elderly population compared to national trends. While the elderly population is projected to increase both locally and nationally, the growth of the elderly population in Southwestern Pennsylvania will lag national trends. In fact, Census Bureau projections for the elderly population show that Pennsylvania as a while has the lowest projected increase in its elderly compared to all other states over the next quarter century.

Over the longer term, other factors are expected to cause future population gains in Southwestern Pennsylvania to lag national trends. National population trends show that the fastest growing parts of the population are Hispanic and recent immigrant groups that have a very low presence in the region. Between 2010 and 2020, national population projections are that the Hispanic population will account for over 44% of all population growth in the United States, despite the fact that they represent under 13% of the national population in 2000.

Figure 7. Historic and Projected Average Annual Population Change by Age Group
11 County Focus Area: 1990-2030
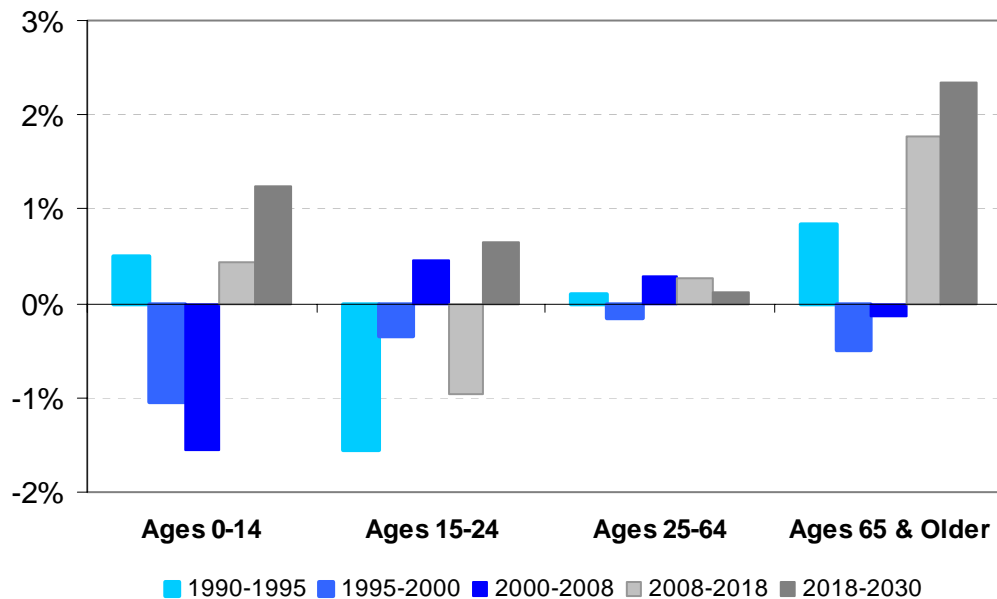
Source: Pittsburgh REMI Model

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Table 6. Focus Area Demographic Forecast by Subregion and Age Group

	1990	2000	2008	2018	2030	2000-2008 #	2000-2008 %	2008-2018 #	2008-2018 %	2008-2030 #	2008-2030 %
Allegheny County											
Ages 0-14	238,093	232,166	204,543	211,279	247,815	-27,623	-11.9%	6,736	3.3%	36,536	17.9%
Ages 15-24	174,568	158,351	164,703	155,900	167,170	6,352	4.0%	-8,803	-5.3%	11,270	6.8%
Ages 25-64	692,142	661,336	662,810	677,542	694,893	1,474	0.2%	14,732	2.2%	17,351	2.6%
Ages 65+	231,937	227,963	217,555	250,881	321,018	-10,408	-4.6%	33,326	15.3%	70,137	32.2%
Total:	1,336,740	1,279,816	1,249,611	1,295,602	1,430,896	-30,205	-2.4%	45,991	3.7%	135,294	10.8%
Beaver, Butler, Fayette, Washington, Westmoreland Counties											
Ages 0-14	203,454	200,176	175,885	186,282	212,695	-24,291	-12.1%	10,397	5.9%	26,413	15.0%
Ages 15-24	137,794	124,905	134,197	116,480	126,742	9,292	7.4%	-17,717	-13.2%	10,262	7.6%
Ages 25-64	540,403	562,945	587,326	609,224	614,331	24,381	4.3%	21,898	3.7%	5,107	0.9%
Ages 65+	177,774	189,100	194,254	233,524	301,220	5,154	2.7%	39,270	20.2%	67,696	34.8%
Total:	1,059,425	1,077,126	1,091,662	1,145,510	1,254,988	14,536	1.3%	53,848	4.9%	109,478	10.0%
Armstrong, Indiana, Greene Counties											
Ages 0-14	40,166	35,679	29,690	30,370	30,979	-5,989	-16.8%	680	2.3%	609	2.1%
Ages 15-24	34,354	32,689	28,352	23,492	25,123	-4,337	-13.3%	-4,860	-17.1%	1,631	5.8%
Ages 25-64	96,637	101,669	107,463	106,741	103,746	5,794	5.7%	-722	-0.7%	-2,995	-2.8%
Ages 65+	31,888	32,494	32,831	39,292	48,454	337	1.0%	6,461	19.7%	9,162	27.9%
Total:	203,045	202,531	198,336	199,895	208,302	-4,195	-2.1%	1,559	0.8%	8,407	4.2%
Cambria County, PA and Garrett County, MD											
Ages 0-14	37,293	31,877	28,517	28,891	27,861	-3,360	-10.5%	374	1.3%	-1,030	-3.6%
Ages 15-24	26,059	23,545	21,680	17,721	17,725	-1,865	-7.9%	-3,959	-18.3%	4	0.0%
Ages 25-64	93,404	92,184	94,041	88,223	76,316	1,857	2.0%	-5,818	-6.2%	-11,907	-12.7%
Ages 65+	34,418	34,471	32,507	37,348	46,933	-1,964	-5.7%	4,841	14.9%	9,585	29.5%
Total:	191,174	182,077	176,745	172,183	168,835	-5,332	-2.9%	-4,562	-2.6%	-3,348	-1.9%
Total 11 County Region											
Ages 0-14	519,006	499,898	438,635	456,822	519,350	-61,263	-12.3%	18,187	4.1%	62,528	14.3%
Ages 15-24	372,775	339,490	348,932	313,593	336,760	9,442	2.8%	-35,339	-10.1%	23,167	6.6%
Ages 25-64	1,422,586	1,418,134	1,451,640	1,481,730	1,489,286	33,506	2.4%	30,090	2.1%	7,556	0.5%
Ages 65+	476,017	484,028	477,147	561,045	717,625	-6,881	-1.4%	83,898	17.6%	156,580	32.8%
Total:	2,790,384	2,741,550	2,716,354	2,813,190	3,063,021	-25,196	-0.9%	96,836	3.6%	249,831	9.2%

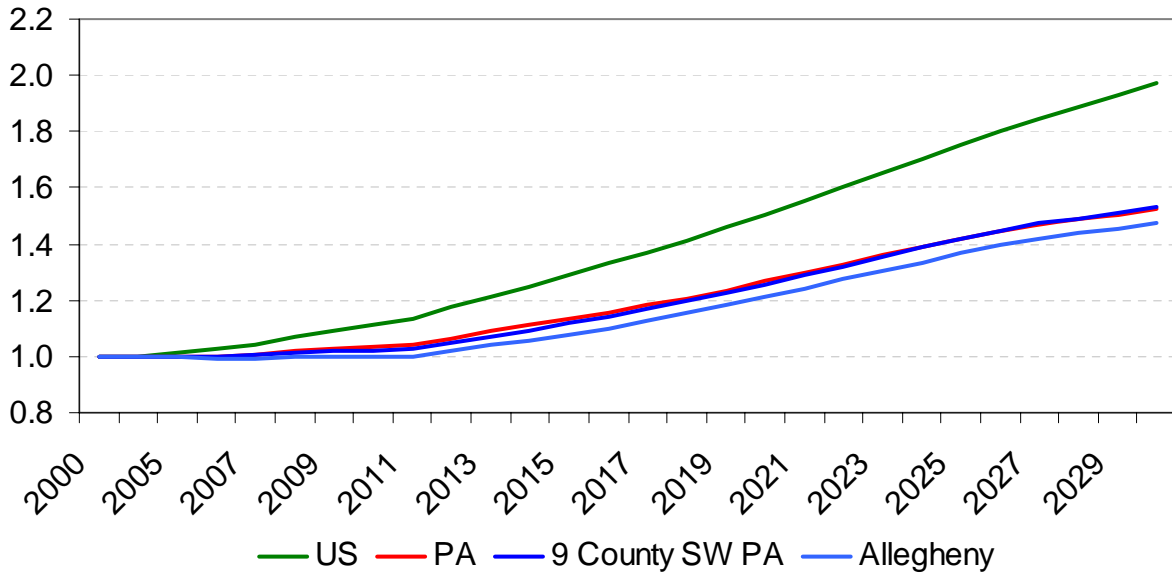Source: Pittsburgh REMI Model. Woods and Poole.

Figure 8. Historic and Projected Natural Population Change
11 County Area: 1991-2030
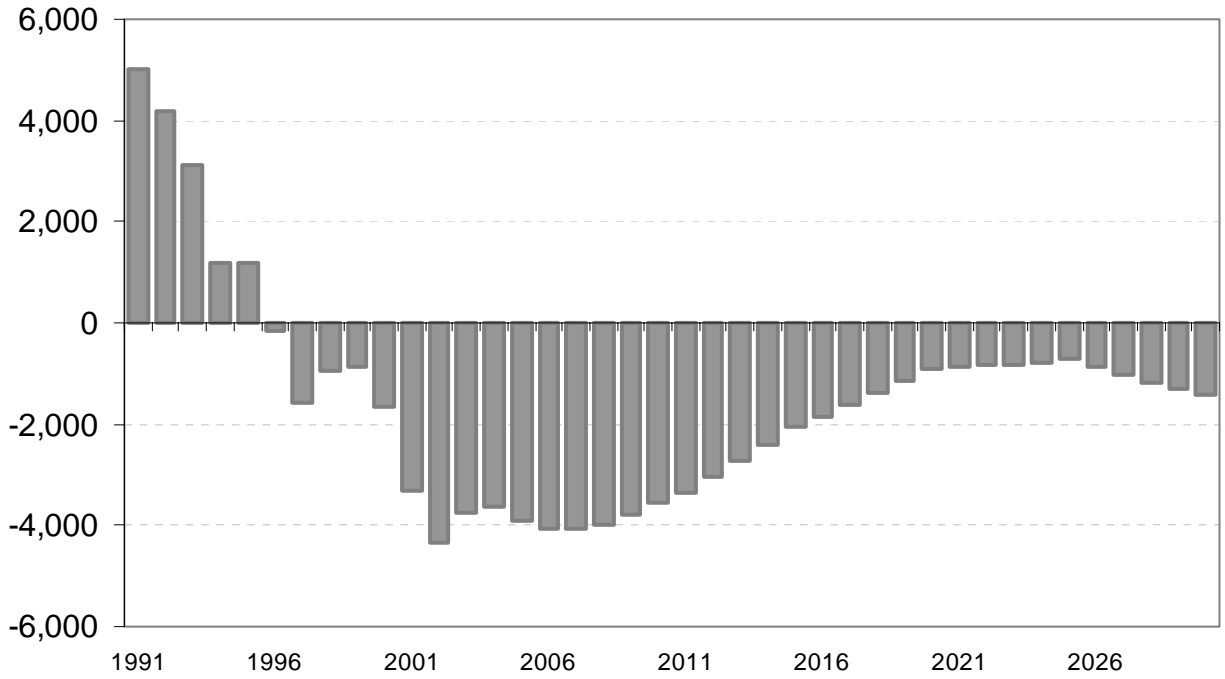
Source: Pittsburgh REMI Model

Figure 9. Indexed Projection of Elderly Population
US, Pennsylvania, SW Pennsylvaia and Allegheny County: 2004-2030 (2004=1.0)

Source: Census Bureau, Pittsburgh REMI Model

Economic Forecast

The economic forecast for the Southwestern Pennsylvania reflects both the effect of past economic restructuring and continued diversification of the region's industries. Once dominated by mining and manufacturing, these industries have slowly lost their competitiveness in the region with corresponding shifts in employment and income generation for the region. As a result of this diversification, regional economic trends are projected to continue converging with national trends.

Table 7 presents the baseline economic forecast for employment by industry in a nine county area of Southwestern Pennsylvania. These nine counties represent the 11 county focus area net of Cambria County, PA and Garrett County, MD. The service sector will account for the majority of all net job creation over the period 2008-2018. Manufacturing and farm employment will continue slow declines as will trade industries to a lesser degree. Overall employment is projected to increase at an average annual rate of 0.6% between 2008 and 2018.

Figure 10 depicts the changing distribution of employment in the Southwestern Pennsylvania region. Continuing diversification in regional industrial structure is evident in both of these. By 2018 service sector employment is projected to be just under half of all regional employment.

As mentioned earlier, an important trend affecting the regional labor force has been shifting trends in the regional labor force. The trend toward increasing labor force participation is projected to continue into the future. Thus even as population projections reflect low overall population growth, higher rates of employment and labor force growth are projected. As in the past, the bulk of labor force gains will come from women as they enter the workforce in greater numbers. This shift corresponds to the shift away from male dominated heavy industries. In recent decades increased employment across a range of service industries have offset the continuing decline of manufacturing employment in the region. This trend is continued to impact the local labor force into the future.
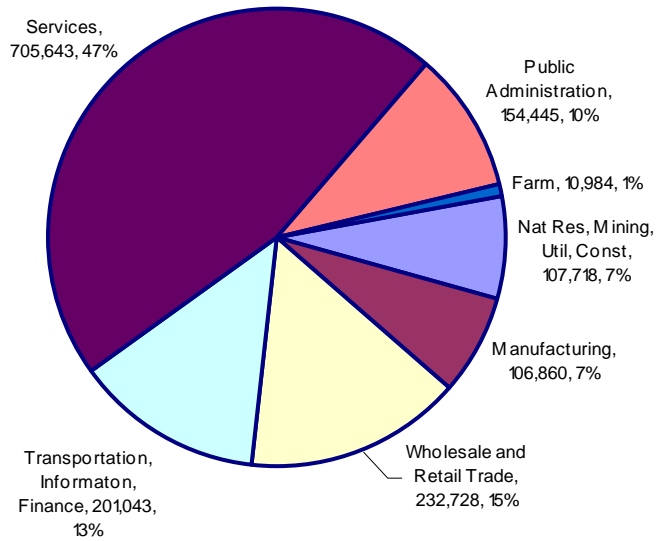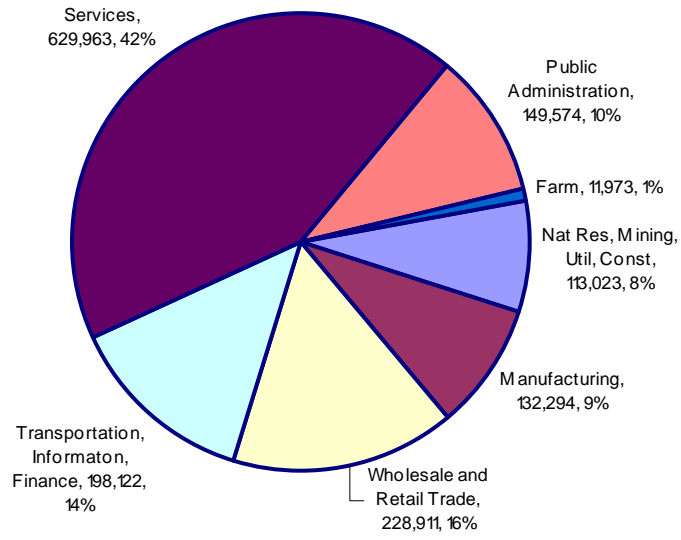
Table 7. Projected Employment by Industry
9 County Area: 2001-2030

	2001	2008	2018	2030	Average Annual Change		
					2001-08	2008-18	2018-30
Nat Resources, Mining, Utilities, Construction	113,023	107,718	114,011	122,345	-0.7%	0.6%	0.6%
Manufacturing	132,294	106,860	94,177	91,603	-2.7%	-1.2%	-0.2%
Wholesale and Retail Trade	228,911	232,728	220,713	194,378	0.2%	-0.5%	-1.0%
Transportation, Informaton, Finance	198,122	201,043	206,427	207,072	0.2%	0.3%	0.0%
Services	629,963	705,643	806,308	904,107	1.7%	1.4%	1.0%
Public Administration	149,574	154,445	155,582	156,074	0.5%	0.1%	0.0%
Farm	11,973	10,984	9,190	7,066	-1.2%	-1.6%	-1.9%

Source: Pittsburgh REMI Model

Figure 10. 11 County Region Employment by Industry: 2001, 2008, 2018

Services, 629,963, 42%
Public Administration, 149,574, 10%
Farm, 11,973, 1%
Nat Res, Mining, Util, Const, 113,023, 8%
Manufacturing, 132,294, 9%
Wholesale and Retail Trade, 228,911, 16%
Transportation, Informaton, Finance, 198,122, 14%

Services, 705,643, 47%
Public Administration, 154,445, 10%
Farm, 10,984, 1%
Nat Res, Mining, Util, Const, 107,718, 7%
Manufacturing, 106,860, 7%
Wholesale and Retail Trade, 232,728, 15%
Transportation, Informaton, Finance, 201,043, 13%

Sociodemographic Trends Affecting Fort Ligonier

Services, 806,308, 49%

Public Administration, 155,582, 10%

Farm, 9,190, 1%

Nat Res, Mining, Util, Const, 114,011, 7%

Manufacturing, 94,177, 6%

Wholesale and Retail Trade, 220,713, 14%

Transportation, Informaton, Finance, 206,427, 13%

Other Significant Trends

Washington Metropolitan Area Growth

Looking beyond the immediate Southwestern Pennsylvania area, the fastest growing section of the Middle Atlantic region is the greater Washington-Baltimore metropolitan area. The Washington-Baltimore-Northern Virginia Combined Statistical Area currently encompasses 34 counties in the District of Columbia, Maryland, Virginia and West Virginia. Its impact is not limited to these counties. Continuing migration to bordering exurban counties is pushing population and income growth ever farther from its urban cores. Looking into the future it can be expected that additional counties will eventually be included in this area and push the metropolitan boundaries closer to the Pennsylvania border and eventually Westmoreland County and Ligonier.

Figure 11 shows an indexed graph of population trends contrasting population growth in both the Pittsburgh-New Castle and the Washington-Baltimore combined statistical areas. Between 1990 and 2004 the population of the Pittsburgh area has declined by 3% while Washington-Baltimore area has increased by over 20%. Similarly personal income growth in the Washington DC area has outstripped trends in the Pittsburgh region by large margins. After adjusting for inflation, total personal income in the Washington DC area increased by 46% between 1990 and 2004 compared to an 18% gain in the Pittsburgh region.

Figure 12 shows county level population changes in a broader Middle Atlantic region that includes the edges of the Washington-Baltimore area. The impact and expansion of the Washington area is clear from the differential growth patterns across counties.

Figure 11. Indexed Population Trend
**Pittsburgh New Castle vs Washington-Baltimore Combined Statistical Areas (1990-1.00)**
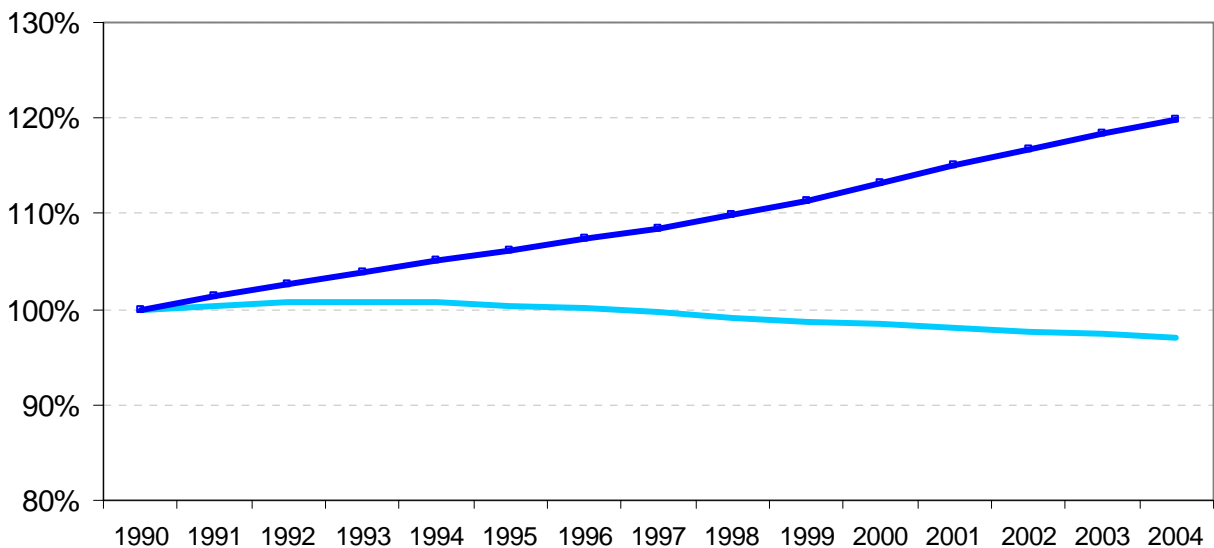
Figure 12. Washington DC Region Population Growth 1970-2004
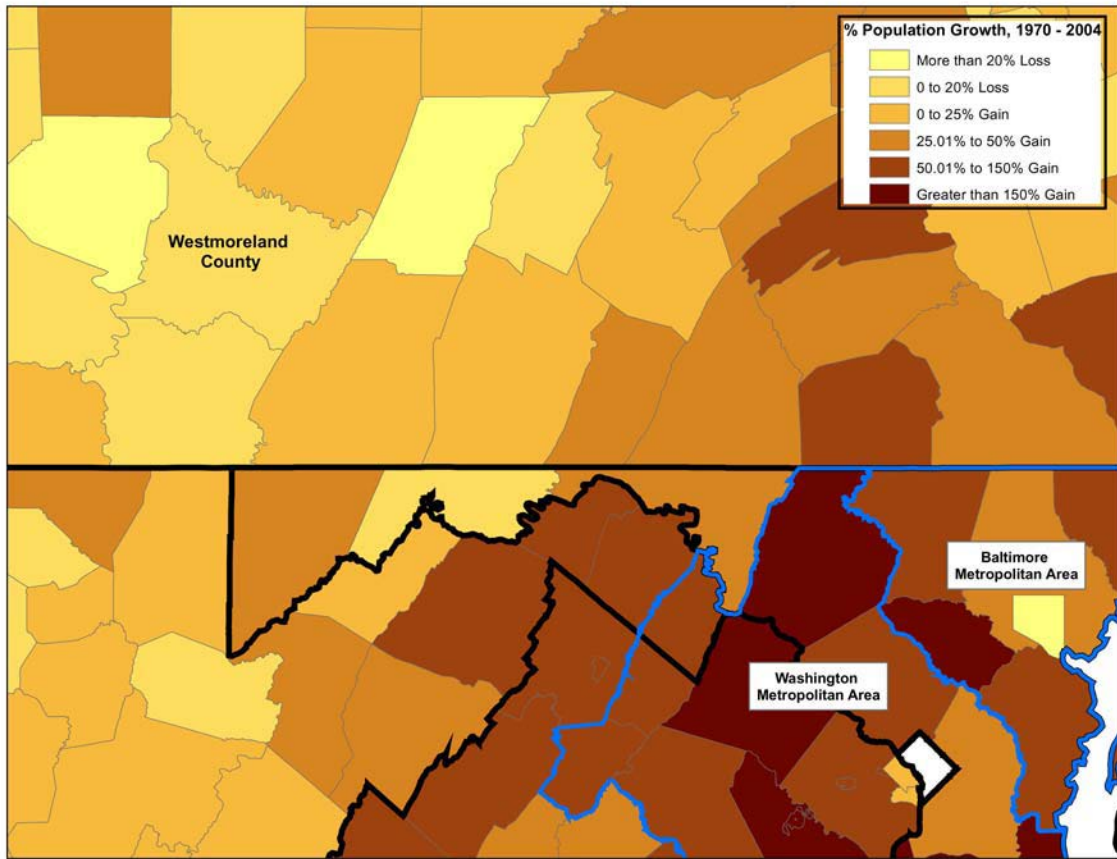
Labor Force Participation

Continuing changes within the labor force can also be expected to have significant impacts on cultural destinations such as Fort Ligonier. One of the most dramatic changes in the labor force both nationally and in Western Pennsylvania has been the changing nature of labor force participation.   While make labor force participation has been declining slightly, the trend for female labor force participation has been increasing steadily.   While working women have the impact of increasing household income it puts greater strain on time available for cultural activities.   While increasing labor force participation is a national trend, its impact has been concentrated in Southwestern Pennsylvania.   Historically the local labor force participation pattern differs historically from national labor force participation patterns, especially in terms of gender. Female labor force participation rates in the Pittsburgh region have historically have been lower than national female labor force participation rates. Pittsburgh region women, and in particular married women with children, were far less likely to be employed compared to other regions of the country.   However, female labor force participation rates in Southwestern Pennsylvania have risen steadily since 1970, while male rates have declined ever so slightly. It has only been in recent years that the labor force participation for working age women in the greater Pittsburgh region have caught up to national levels. The impact for Fort Ligonier comes from the fact that most households in the region are now have multiple workers, a factor that has a significant impact on who can attend regional cultural activities and when.

Figure 13. Labor Force Participation by Gender
9 County Southwestern Pennsylvania: 1970-2000
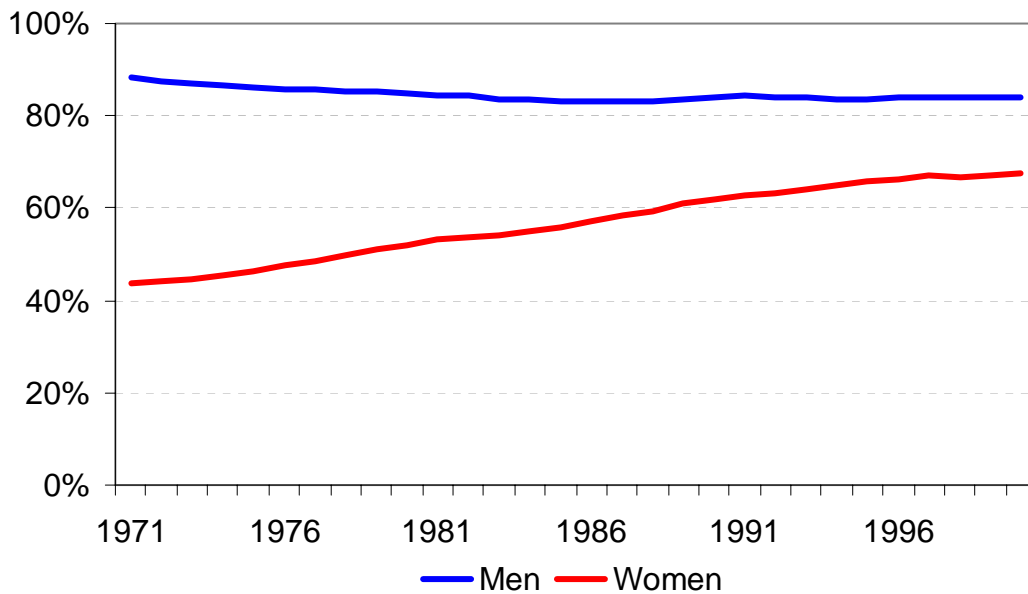
Source: Regional Pittsburgh REMI model.

Data and Methods

This report compiles data from multiple sources. U.S. Census Bureau data for most of the demographic information including historical data. This includes data from the decennial census of various years and the most recent 2005 data compiled from the American Community Survey (ACS) being distributed by the Census Bureau. Population projections were conducted by the University Center for Social and Urban Research at the University of Pittsburgh using the REMI (Regional Economic Model, Inc.) model. More information on the Pittsburgh REMI Model is included below. Other sources for population projections include the Pennsylvania State Data Center and Woods & Poole, Inc. Economic data is compiled from both Census Bureau sources and the REMI model, but also from the Regional Economic Information System distributed by the Bureau of Economic Analysis at the Department of Commerce.

The REMI model has been built especially for the Southwestern Pennsylvania region. The core model was purchased from Regional Economic Models Inc. of Amherst, Massachusetts, which has been in business since 1974. University Center for Social and Urban Research (UCSUR) has been a client of REMI since 1991. UCSUR has over the years participated in the calibration and updates of the REMI model. The REMI model is used extensively around the country by regional planning agencies and other commercial and private sector firms for both regional forecasting and economic impact analysis on various projects. UCSUR works cooperatively with the Southwestern Pennsylvania Commission (SPC), which uses the Pittsburgh REMI model as its core forecasting tool and a foundation of its Transportation Improvement Plan (TIP) produced every five years.

The Pittsburgh REMI model is calibrated for a specific 10 County area in Southwestern Pennsylvania. Nine of these counties are also included in the focus area for this report. Two counties not covered by the Pittsburgh REMI model include Cambria County in Pennsylvania and Garrett County in Maryland. For forecasting purposes, specific forecasts for these two counties were acquired from Woods and Poole, Inc, a national data forecasting company to supplement the REMI model and provide 11 county region-wide forecasts.

The Pittsburgh REMI model can provide forecasts for 4 specific sub-regions of Southwestern Pennsylvania. One of these sub-regions is Lawrence County which is not included in the focus counties for this report. The remaining 9 counties are broken down into three sub-regions. Where appropriate in this report, data on specific sub-regions are reported. Sub-region one is comprised of Allegheny County itself. Sub-region two includes 5 counties: Beaver, Butler, Fayette, Washington and Westmoreland. These 5 counties along with Allegheny County comprise what used to be the definition of the Pittsburgh Metropolitan Statistical Area. In 2003 the Pittsburgh MSA was redefined to also include Indiana County. Sub-region 3 includes 3 counties: Indiana, Armstrong and Greene. Figure 4 depicts these sub-regions and the scope of the Pittsburgh REMI model.

Figure 14. Pittsburgh REMI Model Subregions
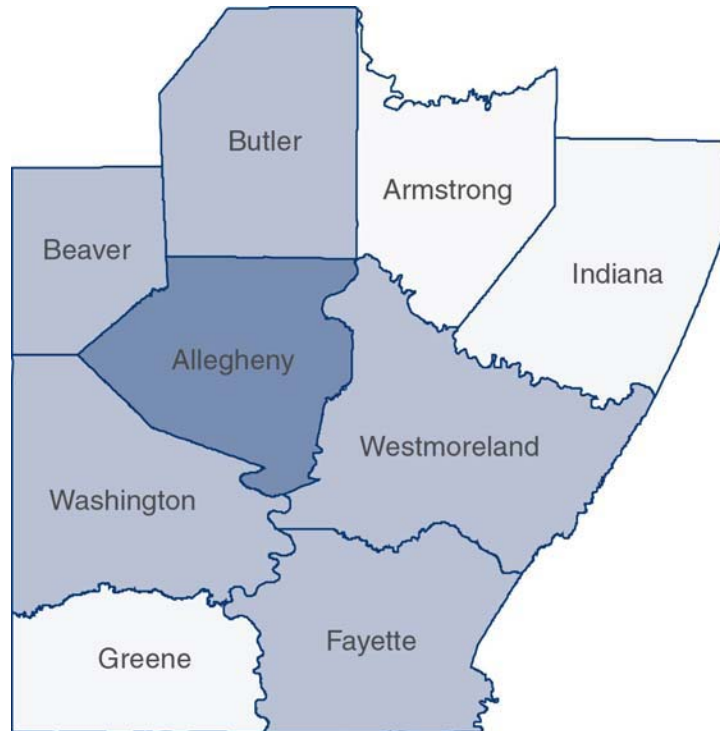
Sub-region 1:

Allegheny County

Sub-region2:

Beaver County
Butler County
Fayette County
Washington County
Westmoreland County

Sub-region 3:

Armstrong County
Indiana County
Greene County

How does the model project future changes in the regional economy? Figure 19 is a pictorial representation of the model. The output block shows a factory, which sells to all of the sectors of final demand, as well as, to other industries. The labor and capital demand block shows how labor and capital requirements depend both on output and on their relative costs. Population and labor supply are shown as contributing to demand and to wage determination in the product and labor market. The feedback from this market shows that economic migrants respond to labor market conditions. Demand and supply interact in the wage, price and profit block. Once prices and profits are established, they determine market shares, which in turn, along with components of demand, determine output.

The REMI model brings all of the above elements together to determine the value of each of the variables in the model for each year in the baseline forecasts. The model includes all the inter-industry relationships that are in an input-output model in the output block, but goes well beyond the input-output model by including the relationships in all of the other blocks shown in Figure 28.

In order to broaden the model in this way, it was necessary to estimate key relationships. This was accomplished by using extensive data sets covering all areas in the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically-sound model structure and to build a model based on all of the relevant data available.

The model has strong dynamic properties, which means that it forecasts not only what will happen, but also when it will happen. This results in long-term predictions that have general equilibrium properties. This means that the long-term properties of general equilibrium models are preserved without sacrificing the accuracy of event timing predictions and without simply taking elasticity estimates from secondary sources.

In order to understand how the model works, you need to know how the key variables in the model interact with each other and how you introduce policy changes into the model. To introduce a policy change, begin by formulating a policy question. Next, select a baseline forecast that uses the baseline assumptions about the external policy variables and then generate an alternative forecast using an external variable set that includes changes in the external values, which are effected by your policy issue.

<u>Output Block</u>

The output block is shown in Figure 17. This illustrates how the components of final demand are included in this block and how they help determine the amount of output. All of the variables except personal consumption also depend on variable values determined in other blocks.

These linkages are shown in Figure 18. What Figures 3 and 4 do not show is that multiple industries in the model buy inputs from each other and consumer spending on specific commodities is determined by the relative price of that commodity, its income elasticity, the size of the population, and for the medical services commodity: the age composition of population.

Figure 15. Linkages in the REMI Model

Linkages Among Major Parts of the REMI Model
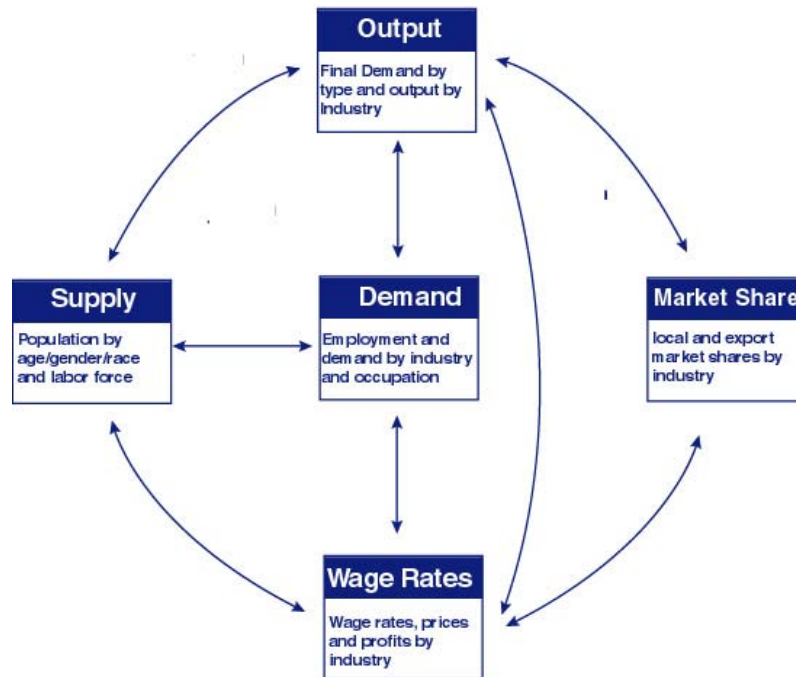
<u>Labor and Capital Demand Block</u>

The labor and capital demand has only three types of key variables: employment, optimal capital stock, and labor/output ratio. Employment is determined by output in each industry (determined in the Output block) and the labor/output ratio. This ratio depends on the relative labor, capital, and fuel costs. Optimal Capital Stock also depends on these same factors and the amount of employment. Simply put, if the cost

of labor increases relative to the cost of capital, the labor per unit of output falls and the capital per unit of labor increases.

Population and Labor Supply Block

The model predicts population for 600 cohorts segmented by age, ethnicity, and gender. This block also calculates the following demographic processes: births, deaths, and aging. The model deals with different population sectors as explained below:

Retired migrants are based on past patterns for each age cohort 65 and over. International migrants follow past regional distributions by country of origin. Military and college populations are treated as special populations that do not follow normal demographic processes. Economic migrants are the migrants who are sensitive to changes in relative economic conditions in the relative regional economies. The economic variables that change economic migration are employment opportunity and real after-tax wage rates.

This block also allows you to determine the size of the labor force by predicting the labor force participation rates for age, ethnicity and gender cohorts; and applying these to their respective cohorts and then adding them up. The key variables that change participation rates within the model are the ratio of employment to the relevant population (labor market tightness) and the real after-tax wage rates.